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Re:

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U.S. Patent Application No. 09/300,302

Applicants: Gerardo H. Llinas, et al.

Title: "Preparation and Use of Heterogeneous

Our Ref.: 617074-8/JP/B-3645

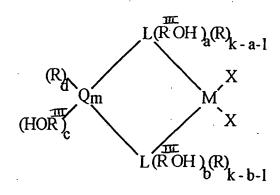
Date: February 5, 2003

TECHNOLOGY CENTER 1

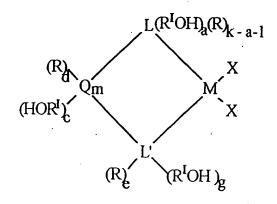
1. (amended three times) A catalytic component obtained by reacting a porous inorganic support with a metallocene compound, wherein the metallocene compound is defined by formula I, II, or III:

 $(LR_k)_z[LR_{k-f}(R^IOH)_f]_xMX_y$ 

I



II, or



<u>III</u>

wherein:

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the **L** groups are equal to or different from each other, wherein each **L** is selected from the group consisting of: cyclopentadienyl, indenyl, tetrahydroindenyl, fluorenyl, octahydrofluorenyl, and benzoindenyl;

each  ${\bf R}$  is independently hydrogen, linear or branched  ${\bf C_1-C_{20}}$  alkyl, linear or branched  ${\bf C_3-C_{20}}$  cycloalkyl, linear or branched  ${\bf C_6-C_{20}}$  aryl, linear or branched  ${\bf C_3-C_{20}}$  alkenyl, linear or branched  ${\bf C_7-C_{20}}$  arylalkyl, linear or branched  ${\bf C_7-C_{20}}$  alkylaryl, linear or branched  ${\bf C_8-C_{20}}$  arylalkenyl, or a group  ${\bf SiR^{II}}_3$ , wherein the  ${\bf C_1-C_{20}}$  alkyl, the  ${\bf C_3-C_{20}}$  cycloalkyl, the  ${\bf C_6-C_{20}}$  aryl, the  ${\bf C_3-C_{20}}$  alkenyl, the  ${\bf C_7-C_{20}}$  alkylaryl, and the  ${\bf C_8-C_{20}}$  arylalkenyl are optionally substituted with 1 to 10 halogen atoms;

the  $\mathbf{R^I}$  groups are equal to or different from each other, wherein each  $\mathbf{R^I}$  is a divalent aliphatic or aromatic hydrocarbon group containing from 1 to 20 carbon atoms;

the R<sup>III</sup> groups are equal to or different from each other, wherein each R<sup>III</sup> is a divalent aliphatic or aromatic hydrocarbon group containing from 1 to 20 carbon atoms, optionally containing from 1 to 5 heteroatoms of groups 14 to 16 of the Periodic Table of the Elements, and optionally containing boron;

each Q is independently B, C, Si, Ge, or Sn;

M is a lanthanide, an actinide, or a metal of group 3, 4, or 10 of the Periodic Table of the Elements;

each  ${\bf X}$  is independently hydrogen, chlorine, bromine,  ${\rm OR^{II}},$   ${\rm NR^{II}}_2,$   ${\rm C_1-C_{20}}$  alkyl, or  ${\rm C_6-C_{20}}$  aryl ;

each  $R^{\rm II}$  is independently linear or branched  $\rm C_1-\rm C_{20}$  alkyl, linear or branched  $\rm C_3-\rm C_{20}$  cycloalkyl, linear or branched  $\rm C_6-\rm C_{20}$ 

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aryl, linear or branched C_3-C_{20} alkenyl, linear or branched C_7-C_{20}
arylalkyl, linear or branched C_7 - C_{20} arylalkenyl, or linear or
branched C_7-C_{20} alkylaryl;
    L' is N or O;
    when L is cyclopentadienyl, k is equal to 5; when L is
indenyl, \mathbf{k} is equal to 7; when \mathbf{L} is fluorenyl or benzoindenyl, \mathbf{k}
is equal to 9; when {f L} is tetrahydroindenyl, {f k} is equal to 11; and
when L is octahydrofluorenyl, k is equal to 17;
      z is equal to 0, 1, or 2;
      \mathbf{x} is equal to 1, 2, or 3;
      y is equal to 1, 2, or 3;
      x + y + z is equal to the valence of M;
      m is equal to 1, 2, 3 or 4;
      a is an integer whose value ranges from 0 to k-1;
      b is an integer whose value ranges from 0 to k-1;
      f is an integer whose value ranges from 1 to k;
      g is equal to 0 to 1;
      c is equal to 0 or 1;
      e is equal to 0 or 1;
      \mathbf{a} + \mathbf{b} + \mathbf{c} is at least 1;
      \mathbf{a} + \mathbf{g} + \mathbf{c} is at least 1;
      d is equal to 0, 1, or 2;
      when \mathbf{Q} is B, then \mathbf{c} + \mathbf{d} = 1;
      when \mathbf{Q} is C, Si, Ge, or Sn, then \mathbf{c} + \mathbf{d} = 2;
      when L' is N, then g + e = 1; and
      when \mathbf{L'} is 0, then \mathbf{g} = 0 and \mathbf{e} = 0.
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2. (amended twice) A catalytic component according to claim 1 wherein  $\mathbf{R^{I}}$  is: linear or branched  $C_1-C_{20}$  alkylene, linear or branched  $C_3-C_{20}$  cycloalkylene, linear or branched  $C_6-C_{20}$  arylene,

linear or branched  $C_7$ - $C_{20}$  alkenyl, linear or branched  $C_7$ - $C_{20}$  arylalkylene, linear or branched  $C_7$ - $C_{20}$  alkylarylene, or a group  $SiR^{II}_{\ 2}$ ; and wherein  $R^{III}$  is: linear or branched  $C_1$ - $C_{20}$  alkylene, linear or branched  $C_3$ - $C_{20}$  cycloalkylene, linear or branched  $C_6$ - $C_{20}$  arylene, linear or branched  $C_7$ - $C_{20}$  alkenyl, linear or branched  $C_7$ - $C_{20}$  arylalkylene, linear or branched  $C_7$ - $C_{20}$  alkylarylene, or the group  $SiR^{II}_{\ 2}$ .

- 3. (amended twice) A catalytic component according to claim 1 wherein  $R^{I}OH$  is  $CH_2-CH_2OH$ ,  $CH_2-CH_2-CH_2OH$ ,  $O-CH_2-CH_2OH$ ,  $SiMe_2-CH_2-CH_2OH$ , or  $SiMe_2-CH_2-CH_2OH$ ; and wherein  $\mathbf{R^{III}}$  is  $CH_2-CH_2OH$ ,  $CH_2-CH_2-CH_2OH$ ,  $O-CH_2-CH_2OH$ ,  $SiMe_2-CH_2-CH_2OH$ , or  $SiMe_2-CH_2-CH_2OH$ .
- 4. (amended three times) A catalytic component according to claim 1 wherein M is titanium, zirconium, or hafnium.
- 5. (amended four times) A catalytic component according to claim 1 wherein the inorganic support is previously treated with alumoxane or trialkylaluminum.
  - 6. (amended three times) A catalytic component obtained by reacting an alumoxane or a trialkylaluminum with a metallocene compound defined by formula I, II, or III:

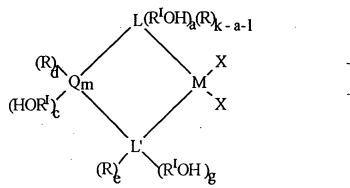
 $(LR_k)_z[LR_{k\text{-}f}(R^lOH)_f]_xMX_y$ 

I



$$(R) \qquad (R) \qquad (R)$$

 $\mathbb{T}$  , or



#### wherein:

the  ${\bf L}$  groups are equal to or different from each other, wherein each  ${\bf L}$  is selected from the group consisting of: cyclopentadienyl, indenyl, tetrahydroindenyl, fluorenyl,

octahydrofluorenyl, and benzoindenyl;

each  ${\bf R}$  is independently hydrogen, linear or branched  ${\bf C_1-C_{20}}$  alkyl, linear or branched  ${\bf C_3-C_{20}}$  cycloalkyl, linear or branched  ${\bf C_6-C_{20}}$  aryl, linear or branched  ${\bf C_3-C_{20}}$  alkenyl, linear or branched  ${\bf C_7-C_{20}}$  alkylaryl, linear or branched  ${\bf C_7-C_{20}}$  alkylaryl, linear or branched  ${\bf C_8-C_{20}}$  arylalkenyl, or a group  ${\bf SiR^{II}}_3$ , wherein the  ${\bf C_1-C_{20}}$  alkyl, the  ${\bf C_3-C_{20}}$  cycloalkyl, the  ${\bf C_6-C_{20}}$  aryl, the  ${\bf C_3-C_{20}}$  alkenyl, the  ${\bf C_7-C_{20}}$  alkylaryl, and the  ${\bf C_8-C_{20}}$  arylalkenyl are optionally substituted with 1 to 10 halogen atoms;

the  $\mathbf{R}^{\mathbf{I}}$  groups are equal to or different from each other, wherein each  $\mathbf{R}^{\mathbf{I}}$  is a divalent aliphatic or aromatic hydrocarbon group containing from 1 to 20 carbon atoms;

the R<sup>III</sup> groups are equal to or different from each other, wherein each R<sup>III</sup> is a divalent aliphatic or aromatic hydrocarbon group containing from 1 to 20 carbon atoms, optionally containing from 1 to 5 heteroatoms of groups 14 to 16 of the Periodic Table of the Elements, and optionally containing boron;

each Q is independently B, C, Si, Ge, or Sn;

M is a lanthanide, an actinide, or a metal of group 3, 4, or 10 of the Periodic Table of the Elements;

each  $\mathbf{X}$  is independently hydrogen, chlorine, bromine, OR<sup>II</sup>, NR<sup>II</sup><sub>2</sub>, C<sub>1</sub>-C<sub>20</sub> alkyl, or C<sub>6</sub>-C<sub>20</sub> aryl;

each  $\mathbf{R^{II}}$  is independently linear or branched  $C_1$ - $C_{20}$  alkyl, linear or branched  $C_3$ - $C_{20}$  cycloalkyl, linear or branched  $C_6$ - $C_{20}$  aryl, linear or branched  $C_3$ - $C_{20}$  alkenyl, linear or branched  $C_7$ - $C_{20}$  arylalkyl, linear or branched  $C_7$ - $C_{20}$  arylalkenyl, or linear or branched  $C_7$ - $C_{20}$  alkylaryl;

L' is N or 0;

when L is cyclopentadienyl, k is equal to 5; when L is indenyl,  $\mathbf{k}$  is equal to 7; when  $\mathbf{L}$  is fluorenyl or benzoindenyl,  $\mathbf{k}$ is equal to 9; when L is tetrahydroindenyl, k is equal to 11; and when L is octahydrofluorenyl, k is equal to 17; **z** is equal to 0, 1, or 2;  $\mathbf{x}$  is equal to 1, 2, or 3; y is equal to 1, 2, or 3; x + y + z is equal to the valence of M; **m** is equal to 1, 2, 3 or 4; **a** is an integer whose value ranges from 0 to k-1; **b** is an integer whose value ranges from 0 to k-1; **f** is an integer whose value ranges from 1 to **k**; g is equal to 0 to 1; c is equal to 0 or 1; e is equal to 0 or 1; a + b + c is at least 1;  $\mathbf{a} + \mathbf{g} + \mathbf{c}$  is at least 1; **d** is equal to 0, 1, or 2; when  $\mathbf{Q}$  is B, then  $\mathbf{c} + \mathbf{d} = 1$ ; when  $\mathbf{Q}$  is C, Si, Ge, or Sn, then  $\mathbf{c} + \mathbf{d} = 2$ ; when L' is N, then g + e = 1; and

- 7. (amended three times) A catalytic component according to claim 6 wherein the metallocene compound is defined by the formula I or the formula II.
- 8. (amended three times) A catalytic component as claimed in claim 1, wherein the metallocene compound is defined by the

when L' is 0, then g = 0 and e = 0.



#### formula II or the formula III.



- 9. (amended twice) A process for polymerization of alpha olefins in a slurry, in a gas phase, in bulk, or in a solution, wherein the polymerization is catalyzed by the catalytic component claimed in claim 8.
- 10. (amended twice) A catalytic component according to claim 1 wherein the metallocene compound is defined by the formula II.
- 11. (amended twice) A catalytic system comprising the catalytic component claimed in claim 1 and a cocatalyst selected from the group consisting of: an alkylaluminoxane, trialkylaluminum, Lewis acids, and mixtures thereof.



- 13. (amended once) A catalytic component as claimed in Claim 1, wherein R<sup>II</sup> is methyl, ethyl, or isopropyl.
- 14. (amended once) A catalytic component as claimed in Claim 8, wherein  ${\bf c}$  is equal to 1 and  ${\bf L}^{{\bf r}}$  is 0.
- 15. (amended once) A catalytic component as claimed in Claim 1, wherein the metallocene compound is selected from the group consisting of:

bis(2-hydroxyethyl-cyclopentadienyl) zirconium dichloride;

(2-hydroxyethyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

(2-hydroxyethyl-cyclopentadienyl)(indenyl) zirconium dichloride; (2-hydroxyethyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride; (2-hydroxyethyl-cyclopentadienyl)(fluorenyl) zirconium dichloride; (2-hydroxyethyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride; (2-hydroxyethyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride; bis(3-hydroxyropyl-cyclopentadienyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(indenyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(fluorenyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride; (3-hydroxyropyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride; bis(2-hydroxy-ethoxy-cyclopentadienyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(fluorenyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride; (2-hydroxy-ethoxy-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride; bis(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride; (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride: (3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride; (3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride; (3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride; (3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride; (3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium

dichloride:

bis(2-hydroxy-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride; (2-hydroxy-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl) (ciclopentadienil) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-3-hydroxyropyl-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl) (ciclopentadienil) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiy(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium

dichloride;

dimethylsilandiylbis(2-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

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dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) (1-indenyl)zirconium dichloride;

isopropylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

isopropylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride;

isopropylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride;

isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride:

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride:

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride;





isopropylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium

#### dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl))

zirconium dichloride; ethylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride; ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride;

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ethylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride: ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride: ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiylbis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(3-hydroxyropyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiylbis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;

dimethylsilandiylbis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride;

isopropylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride;

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ethylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride;
ethylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride;
dichloride;
ethylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;
ethylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride;
ethylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium
dichloride;
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ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(cyclopentadienyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(3-hydroxyropyl)- fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(3-hydroxyropyl)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(2-hydroxyethyl-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(3-hydroxyropyl-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(2-hydroxy-ethoxy-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-indenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

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- 2-hydroxyethyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silndiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride:
- 2-hydroxyethyl(methyl)silandiylbis(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium

dichloride;

- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride:
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;

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- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride:
- 1-(3-hydroxypropyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride:
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride:
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) titanium dichloride:
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) titanium dichloride:
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) titanium dichloride; (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) titanium dichloride; (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) titanium dichloride; (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) titanium dichloride; (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride; (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride; (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;

- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) titanium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) titanium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) titanium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride:

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- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) titanium dichloride;



- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride:
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)
- (tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride:
- (2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;





- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride; (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride; (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride; (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) titanium dichloride (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;

dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) zirconium

- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) zirconium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) zirconium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) zirconium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;

(3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) zirconium

dichloride;

(dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) zirconium dichloride:

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) zirconium dichloride:

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) zirconium dichloride:

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) zirconium dichloride:

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride:

2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;

2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride:

2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;

- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride:
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;



- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)
- (tetramethylcyclopentadienyl) zirconium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) zirconium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;

(2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) zirconium dichloride;

- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) zirconium dichloride
- ethylidene(1-(3-(3-hydroxypropyl)-indenyl))(cyclopentadienyl) zirconium dichloride;
- ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride;
- dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride;



dimethylsilandiyl(1-(3-(3-hydroxypropyl)-indenyl)) (cyclopentadienil) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride; and isopropylidene(1-(3-(3-hydroxypropyl)-indenyl(cyclopentadienyl) zirconium dichloride.

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16. (amended once) A catalytic component as claimed in Claim 6, wherein the metallocene compound is selected from the group consisting of:

bis(2-hydroxyethyl-cyclopentadienyl) zirconium dichloride;

- (2-hydroxyethyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(indenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;
- bis(3-hydroxyropyl-cyclopentadienyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(indenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;
- bis(2-hydroxy-ethoxy-cyclopentadienyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(fluorenyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;
- bis(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride;
- (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride;
- (2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

bis(2-hydroxy-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride;

(2-hydroxy-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

dimethylsilandiylbis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

dimethylsilandiylbis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl) (ciclopentadienil) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride:

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride;

dimethylsilandiylbis(3-3-hydroxyropyl-cyclopentadienyl) zirconium dichloride;

 $dimethyl silandiyl (3-3-hydroxyropyl-cyclopentadienyl) \ (ciclopentadienil) \ zirconium \ dichloride;$ 

dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;



dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiy(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

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dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

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dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiy(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride:

dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride:

dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride:

dimethylsilandiylbis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride:

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) (1-indenyl)zirconium dichloride; isopropylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium

dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(2-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride: isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride: isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride; ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride;

ethylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride: ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride: ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiylbis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride;

dimethylsilandiylbis(1-(3-(3-hydroxyropyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride: dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride: dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride:

dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium

isopropylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride;

dichloride:

isopropylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride: isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride: isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride: isopropylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium

dichloride;

isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; ethylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride; ethylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride; dichloride; ethylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; ethylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; ethylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(cyclopentadienyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(3-hydroxyropyl)- fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilylenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilylenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(9-(1-(3-hydroxyropyl)-fluorenyl)) zirconium dichloride;

isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride;

isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride:

isopropylidenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride;

isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(9-(1-(2-hydroxyethyl-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-fluorenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-indenyl) zirconium dichloride;



ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(3-hydroxyropyl-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(2-hydroxy-ethoxy-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium

ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

- 2-hydroxyethyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silndiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 2-hydroxyethyl(methyl)silandiylbis(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dichloride:

- 3-hydroxyropyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(1-indenyl) zirconium dichloride;



- 1-(2-hydroxyethyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride:
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride:
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride:
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride:
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidenebis(cyclopentadienyl) zirconium dichloride:
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) titanium



dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;

(2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) titanium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) titanium dichloride;

(dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;

(3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) titanium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) titanium dichloride;



(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride;

- 2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;



- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride:
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) titanium dichloride;





- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)
- (tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) titanium dichloride;



- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride:
- 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) titanium dichloride
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;



- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride:
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) zirconium dichloride:
- (dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) zirconium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) zirconium dichloride;

.(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride;

- 2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;

- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride; (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium
- dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride:
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride:
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium
- dichloride;
  - (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) zirconium dichloride;
  - (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) zirconium dichloride;
  - (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride:
  - (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) zirconium dichloride;
  - 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
  - (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride:
  - (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
  - (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
  - (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride:
  - (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) zirconium dichloride;
  - (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride:
  - (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
  - (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)





(tetramethylcyclopentadienyl) zirconium dichloride;

- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;





(2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;

(2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) zirconium dichloride ethylidene(1-(3-(3-hydroxypropyl)-indenyl))(cyclopentadienyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl)) (cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxypropyl)-indenyl)) (cyclopentadienyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxypropyl)-indenyl))(cyclopentadienyl) zirconium dichloride; and isopropylidene(1-(3-(3-hydroxypropyl)-indenyl)(cyclopentadienyl) zirconium dichloride.

17. (amended once) A catalytic system as claimed in Claim 8, wherein the metallocene compound is selected from the group consisting of:

bis(2-hydroxyethyl-cyclopentadienyl) zirconium dichloride;

- (2-hydroxyethyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(indenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

bis(3-hydroxyropyl-cyclopentadienyl) zirconium dichloride;

- (3-hydroxyropyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(indenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;
- (3-hydroxyropyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride:

bis(2-hydroxy-ethoxy-cyclopentadienyl) zirconium dichloride;

- (2-hydroxy-ethoxy-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;
- (2-hydroxy-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride;





(2-hydroxy-ethoxy-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;

(2-hydroxy-ethoxy-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(2-hydroxy-ethoxy-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;

(2-hydroxy-ethoxy-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

bis(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;

(2-hydroxy-ethyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(indenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(2-methyl-indenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(fluorenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(9-methyl-fluorenyl) zirconium dichloride;

(3-hydroxy-propyl-(dimethyl)silyl-cyclopentadienyl)(pentamethylcyclopentadienyl) zirconium dichloride;

bis(2-hydroxy-(dimethyl)silyl-cyclopentadienyl) zirconium dichloride;

(2-hydroxy-(dimethyl)silyl-cyclopentadienyl)(cyclopentadienyl) zirconium dichloride;

dimethylsilandiylbis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

dimethylsilandiylbis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl) (ciclopentadienil) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride:

dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;



dichloride;



dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-3-hydroxyropyl-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl) (ciclopentadienil) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

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dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-3-hydroxyropyl-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(2-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy)-ethoxy-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy)-ethoxy-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;



dimethylsilandiylbis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiylbis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

dimethylsilandiyl(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;

dimethylsilandiylbis(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) zirconium dichloride;

dimethylsilandiyl(3-(2-hydroxy-(dimethyl)silyl-1-indenyl) (1-indenyl)zirconium dichloride;

isopropylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

isopropylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium

dichloride;

isopropylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(2-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2methylbenzoindenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; isopropylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride;



isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride:

isopropylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl (9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; isopropylidene(2-(2-hydroxy-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;

ethylidenebis(2-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

ethylidenebis(3-(2-hydroxyethyl)-cyclopentadienyl) zirconium dichloride;

ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride;

ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;

ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

ethylidene(2-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidene(3-(2-hydroxyethyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(2-(3-hydroxypropyl)-cyclopentadienyl) zirconium dichloride;

ethylidenebis(3-(3-hydroxyropyl)-cyclopentadienyl) zirconium dichloride;

ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl) (cyclopentadienyl) zirconium dichloride;

ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride;



ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(3-hydroxyropyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(3-hydroxypropyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-3-hydroxyropyl-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxy-ethoxy)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethoxy)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; ethylidenebis(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-indenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride: ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-fluorenyl) zirconium dichloride; ethylidene(2-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: ethylidene(3-(2-hydroxy-ethyl-(dimethyl)silyl)-cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiylbis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;

dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiylbis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(3-hydroxyropyl)-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxyropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiylbis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride: dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride: dimethylsilandiyl(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: dimethylsilandiylbis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiylbis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium



dichloride;

dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; dimethylsilandiyl(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

dimethylsilandiyl(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride;

isopropylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride;

isopropylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride;

isopropylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidene(1-(3-3-hydroxyropyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

isopropylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;

isopropylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride;



isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; isopropylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride: isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: isopropylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride: ethylidenebis(1-(2-(2-hydroxyethyl)-indenyl)) zirconium dichloride; ethylidenebis(1-(3-(2-hydroxyethyl)-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-fluorenyl) zirconium dichloride; ethylidene(1-(2-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; ethylidenebis(1-(2-(3-hydroxypropyl)-indenyl)) zirconium dichloride; ethylidenebis(1-(3-3-hydroxyropyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-indenyl) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(3-3-hydroxyropyl-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride; ethylidene(1-(2-(3-hydroxypropyl)-indenyl))(9-fluorenyl) zirconium dichloride;

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ethylidene(1-(3-3-hydroxyropyl-indenyl))(9-fluorenyl) zirconium dichloride;
dichloride;
ethylidenebis(1-(2-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;
ethylidenebis(1-(3-(2-hydroxy-ethoxy-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethoxy-indenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
ethylidenebis(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride;
ethylidenebis(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl)) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-indenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium
dichloride:
ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(1-(2-methyl-indenyl)) zirconium
dichloride:
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-fluorenyl) zirconium dichloride;
ethylidene(1-(2-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium
dichloride:
ethylidene(1-(3-(2-hydroxy-ethyl-(dimethyl)silyl-indenyl))(9-(2-methyl-fluorenyl)) zirconium
dichloride:
dimethylsilylenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride;
dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(cyclopentadienyl) zirconium dichloride;
dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride;
dimethylsilylene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;
dimethylsilylenebis(9-(1-(3-hydroxyropyl)- fluorenyl)) zirconium dichloride;
dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride;
dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;
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dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; dimethylsilylenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; dimethylsilylene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxyethyl)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxyethyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(3-hydroxyropyl)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(3-hydroxyropyl)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxy-ethoxy)-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethoxy)-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride; isopropylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride; isopropylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium

#### dichloride;

isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; isopropylidene(9-(1-2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(9-(1-(2-hydroxyethyl-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-fluorenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(1-indenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxyethyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(9-(1-(3-hydroxyropyl-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-fluorenyl) zirconium dichloride;

ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(1-indenyl) zirconium dichloride;

ethylidene(9-(1-(3-hydroxyropyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(9-(1-(2-hydroxy-ethoxy-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-fluorenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-(2-methyl-indenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(1-indenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethoxy-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

ethylidenebis(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl)) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-fluorenyl) zirconium dichloride;

ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-(2-methyl-indenyl)) zirconium

dichloride;

ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(1-indenyl) zirconium dichloride; ethylidene(9-(1-(2-hydroxy-ethyl-(dimethyl)silyl-fluorenyl))(9-(2-methyl-fluorenyl)) zirconium dichloride;

2-hydroxyethyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;

2-hydroxyethyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;

2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;

2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;

2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;

2-hydroxyethyl(methyl)silndiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;

2-hydroxyethyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;

2-hydroxyethyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium

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#### dichloride;

- 2-hydroxyethyl(methyl)silandiylbis(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiylbis(1-indenyl) zirconium dichloride;
- 3-hydroxyropyl(methyl)silandiyl(cyclopentadienyl)(1-(2-methylbenzoindenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiylbis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-fluorenyl) zirconium dichloride:
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)silandiyl(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride;
- 2-hydroxy-ethoxy-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(cyclopentadienyl) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-indenyl) zirconium



#### dichloride;

- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-fluorenyl) zirconium dichloride:
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidene(cyclopentadienyl)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 2-hydroxy-ethyl-(dimethyl)silyl-(methyl)methylidenebis(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride:
- 1-(2-hydroxyethyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- 1-(3-hydroxypropyl)-ethylidenebis(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethoxy)-ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride:
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidenebis(cyclopentadienyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-indenyl) zirconium dichloride;



- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(1-(2-methyl-indenyl)) zirconium dichloride
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-fluorenyl) zirconium dichloride;
- 1-(2-hydroxyethyl)-(dimethyl)silyl ethylidene-1-(cyclopentadienyl)-2-(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) titanium dichloride;



- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) titanium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) titanium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) titanium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) titanium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) titanium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) titanium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) titanium dichloride;



(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) titanium dichloride;

- 2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) titanium

#### dichloride:

- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride:
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;



- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) titanium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)
- (tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) titanium dichloride:
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) titanium dichloride;
- (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) titanium dichloride;



- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) titanium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) titanium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) titanium dichloride
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcylopentadienyl) zirconium dichloride;



- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl)silandiyl-(tertbutylamido)(1-(2-metthylbenzoindenyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(3-((2-hydroxyethyl)cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(tertbutylamido)(1-(3-(2-hydroxyethyl)indenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(cylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(tetramethylcylopentadienyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-indenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(9-fluorenyl) zirconium dichloride;
- (dimethyl)silandiyl-(2-(2-hydroxyethyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl)silandiyl(tertbutylamido)-(1-(2-methylbenzoindenyl) zirconium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(3-((3-hydroxypropyl)cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(tertbutylamido)(1-(3-(3-hydroxypropyl)indenyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(cylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(tetramethylcylopentadienyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-indenyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(9-fluorenyl) zirconium dichloride;

(dimethyl)silandiyl-(3-(3-hydroxypropyl)amido)(1-(2-methylbenzoindenyl) zirconium dichloride;

- 2-hydroxyethyl-methoxy (methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride:
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl(tertbutylamido)-(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-(tertbutylamido)(tetramethylcyclopentadienyl)



#### zirconium dichloride;

- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)silandiyl-(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(methyl)methylene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(indenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-indenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)-(methyl)methylene(tertbutylamido)(2-methyl-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-fluorenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl)methylen(-tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride; (2-hydroxyethoxy)-(methyl)methylene(tertbutylamido)(tetramethylcyclopentadienyl) zirconium



#### dichloride;

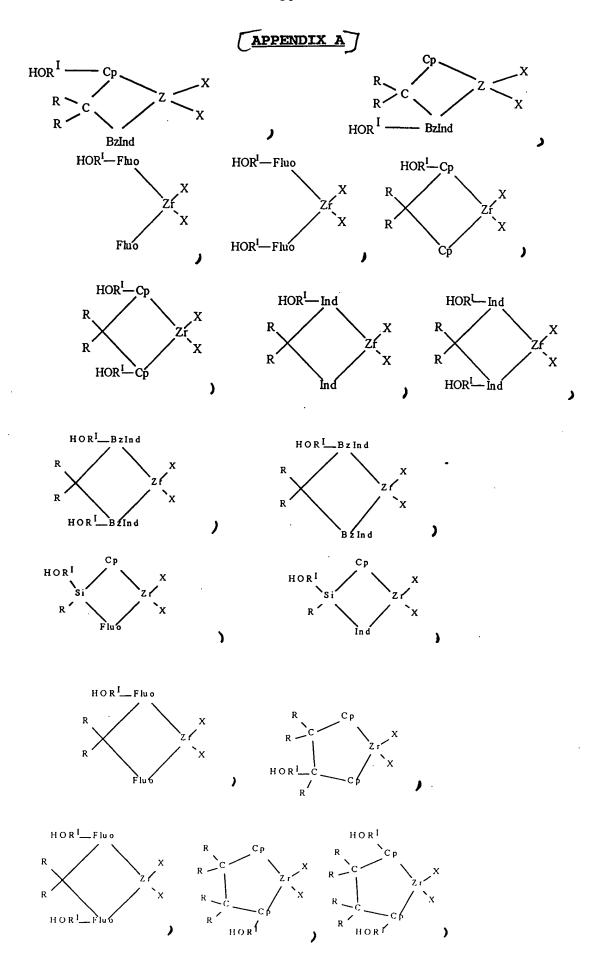
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethoxy)-(methyl)methylen(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methylene(tertbutylamido)(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl (methyl) methylene (tertbutylamido)
- (tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)-(dimethyl)silyl-(methyl)methilene(tertbutylamido)(9-(2-methyl-fluorenyl)) zirconium dichloride:
- (2-hydroxyethyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo-(tetramethylcyclopentadienyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (2-hydroxyethyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride;
- (3-hydroxypropyl)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride:
- 2-hydroxyethyl-methoxy(methyl) silandiyl- oxo(cylopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride;
- 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride;



2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride; 2-hydroxyethyl-methoxy(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-fluorenyl) zirconium dichloride; (2-hydroxyethoxy)(methyl) silandiyl-oxo(9-(2-methyl-fluorenyl)) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(cylopentadienyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(tetramethylcyclopentadienyl) zirconium dichloride: (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-indenyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(1-(2-methyl-indenyl)) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(fluorenyl) zirconium dichloride; (2-hydroxyethyl)-(dimethyl)silyl-(methyl) silandiyl-oxo(9-methylfluorenyl) zirconium dichloride ethylidene(1-(3-(3-hydroxypropyl)-indenyl))(cyclopentadienyl) zirconium dichloride; ethylidene(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride; dimethylsilandiyl(1-(3-(3-hydroxypropyl)-indenyl)) (cyclopentadienil) zirconium dichloride; isopropylidene(1-(3-(2-hydroxyethyl)-indenyl))(cyclopentadienyl) zirconium dichloride; and

18. (amended once) A catalytic component as claimed in Claim 1, wherein the metallocene compound is selected from the group consisting of:

isopropylidene(1-(3-(3-hydroxypropyl)-indenyl(cyclopentadienyl) zirconium dichloride.



# TAPPENDIX A ]

HOR HORI-HOR R′ HOR HOR<sup>I</sup> HOR! Fluo BzInd BzInd BzInd HOR<sup>I</sup> HOR HOR HOR<sup>L</sup>Ind HOR Ind HOR<sup>I</sup> R'HOR!—Ind Ìnd HORI HOR R'HOR I HOR I

HOR I HOR I' HOR I ) BzInd Fluo Ind R' R' l R R HOR HORI HOR > HOR , Ind Fluo HOR! HOR<sup>I</sup> HOR<sup>I</sup> / R R'  $HOR^{I}_{\climate{l}}$ HORI HORI BzInd Fluo HOR! ,Si R / R , HOR! HORI HORI Fluo R R'HOR<sup>I</sup> Bz Ind R 82

wherein:

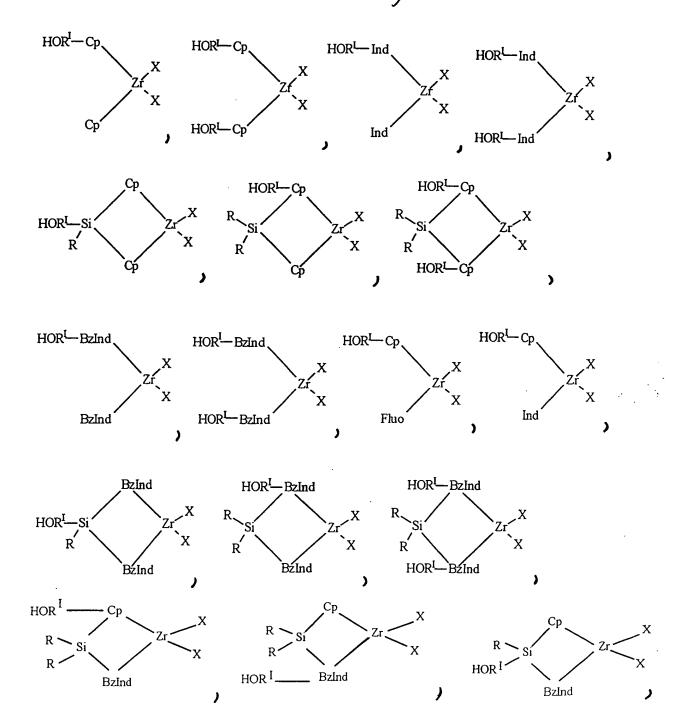
Cp is cyclopentadienyl optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl;

Ind is indenyl optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl;

 ${\bf BzInd}$  is benzoindenyl optionally substituted with  $C_1\text{-}C_{20}$  alkyl,  $C_3\text{-}C_{20}$  cycloalkyl,  $C_6\text{-}C_{20}$  aryl,  $C_3\text{-}C_{20}$  alkenyl,  $C_7\text{-}C_{20}$  arylalkyl,  $C_8\text{-}C_{20}$  arylalkenyl, or  $C_7\text{-}C_{20}$  alkylaryl;

**Fluo** is a fluorenyl ring optionally substituted with  $C_1-C_{20}$  alkyl,  $C_3-C_{20}$  cycloalkyl,  $C_6-C_{20}$  aryl,  $C_3-C_{20}$  alkenyl,  $C_7-C_{20}$  arylalkyl,  $C_8-C_{20}$  arylalkenyl, or  $C_7-C_{20}$  alkylaryl; and **Cp\*** is

19. (amended once) A catalytic component as claimed in Claim 6, wherein the metallocene compound is selected from the group consisting of:



# (APPENDIX A) HOR I HOR I BzInd BzInd HORI-Fluo HORI-Fluo HOR<sup>I</sup>—Cp R HOR<sup>I</sup>—Fluo Fluo HORI-Cp HOR Ind HOR<sup>L</sup>—Ind HOR!—C HOR Ind HOR J\_BzInd HOR LBz Ind HOR LB Ind Bilnd H O R I\_\_\_ F lu o H O R I\_\_\_ F lu o

HOR L\_

l R

87

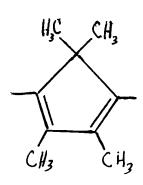
wherein:

Cp is cyclopentadienyl optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl;

Ind is indenyl optionally substituted with  $C_1-C_{20}$  alkyl,  $C_3-C_{20}$  cycloalkyl,  $C_6-C_{20}$  aryl,  $C_3-C_{20}$  alkenyl,  $C_7-C_{20}$  arylalkyl,  $C_8-C_{20}$  arylalkenyl, or  $C_7-C_{20}$  alkylaryl;

BzInd is benzoindenyl optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl;

Fluo is a fluorenyl ring optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl; and  $C_7$  is



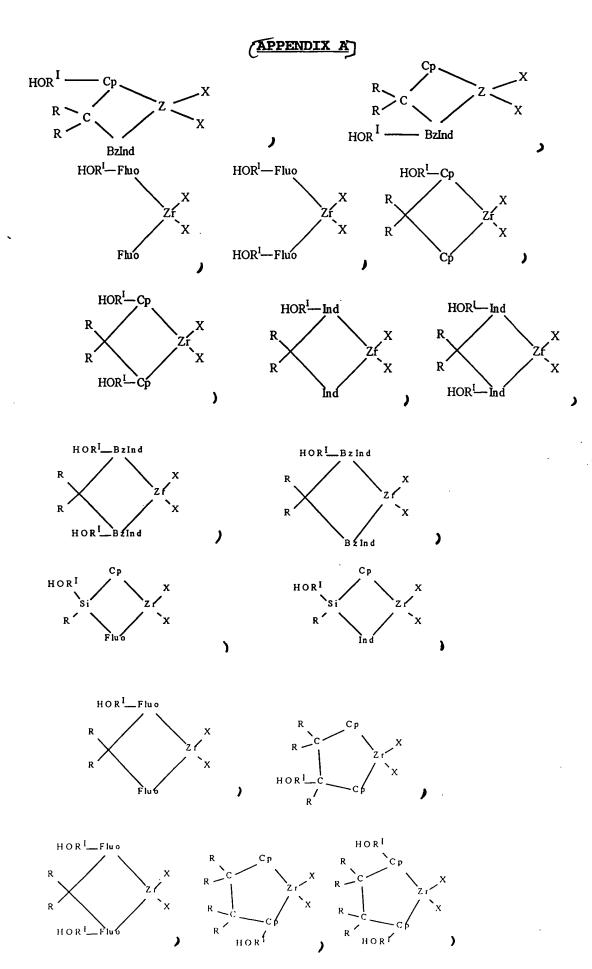
20. (amended once) A catalytic system as claimed in Claim 8, wherein the metallocene compound is selected from the group consisting of:

HOR<sup>I</sup>—Cp. HORL-Cp. HOR<sup>L</sup>—Ind HOR Ind HOR<sup>L</sup>—Cp Cp Ind HOR<sup>L</sup>—Ind HOR<sup>L</sup>Cp HOR<sup>L</sup>Cp HOR<sup>L</sup> R R HOR<sup>L</sup>Cp ) HOR<sup>I</sup>—Cp HOR<sup>L</sup>—Cp HOR<sup>L</sup>—BzInd HOR BzInd Ind Fluo HOR<sup>L</sup>BzInd BzInd )  $HOR^{\underline{I}}\!\!-\!BzInd$ HOR<sup>I</sup>—BzInd BzInd HOR<sup>I</sup> R' R HOR<sup>I</sup>—BzInd BzInd BzInd HOR I HOR I HOR I -BzInd BzInd BzInd

)

)

J



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wherein:

 ${\bf Cp}$  is cyclopentadienyl optionally substituted with  $C_1-C_{20}$  alkyl,  $C_3-C_{20}$  cycloalkyl,  $C_6-C_{20}$  aryl,  $C_3-C_{20}$  alkenyl,  $C_7-C_{20}$  arylalkyl,  $C_8-C_{20}$  arylalkenyl, or  $C_7-C_{20}$  alkylaryl;

Ind is indenyl optionally substituted with  $C_1$ - $C_{20}$  alkyl,  $C_3$ - $C_{20}$  cycloalkyl,  $C_6$ - $C_{20}$  aryl,  $C_3$ - $C_{20}$  alkenyl,  $C_7$ - $C_{20}$  arylalkyl,  $C_8$ - $C_{20}$  arylalkenyl, or  $C_7$ - $C_{20}$  alkylaryl;

 ${\bf BzInd}$  is benzoindenyl optionally substituted with  ${\rm C_1-C_{20}}$  alkyl,  ${\rm C_3-C_{20}}$  cycloalkyl,  ${\rm C_6-C_{20}}$  aryl,  ${\rm C_3-C_{20}}$  alkenyl,  ${\rm C_7-C_{20}}$  arylalkyl,  ${\rm C_8-C_{20}}$  arylalkenyl, or  ${\rm C_7-C_{20}}$  alkylaryl;

 $\label{eq:Fluo} \textbf{Fluo} \ \text{is a fluorenyl ring optionally substituted with $C_1$-$C$_{20}$ alkyl, $C_3$-$C$_{20}$ cycloalkyl, $C_6$-$C$_{20}$ aryl, $C_3$-$C$_{20}$ alkenyl, $C_7$-$C$_{20}$ arylalkyl, $C_8$-$C$_{20}$ arylalkenyl, or $C_7$-$C$_{20}$ alkylaryl; and$ 

Cp\* is